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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,015	11/17/2003	Hui-Wan Chen	CHEN3599/EM	9738
23364 7590 02/15/2007 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			EXAMINER WATTS, ALLISON LEIGH	
			ART UNIT	PAPER NUMBER
			1753	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/15/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/713,015	Applicant(s) CHEN, HUI-WAN	
	Examiner Allison L. Watts	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

1. Claim 2 is objected to because of the following informalities: The phrase "front and rear said" should read as "front and rear side". Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox in view of Schuette.

As to Claim 1, Fox discloses an electrophoresis module (10) having an electrophoresis bath (39) with upright carriers (57) and an upright cassette (41) (column 4, lines 54-67); with a clamping assembly provided on the right and left sides, with at

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least one clip (53), a rotating knob (55), and protrusions (56) provided on the cassette for slipping into guide slots (column 5, lines 42-55, Figures 1-3).

Fox do not disclose a clamping assembly for the purpose of pressing the carrier sets toward the cassette (column 6, lines 33-39), but do not disclose the clamping assembly additionally comprising a bevel slit linked with the rotating knob, where the knob has a pusher rod able to be inserted into the bevel slit.

Schuette discloses a cassette (100) having an upright carrier (1200) (Figure 12), with a clamping assembly (105) composed of at least one clip (1116) and a rotating knob (1102) for moving the clip; a plurality of guide slots (208) facing in a direction parallel to that of clamping for slipping of a plurality of protrusions provided on the cassette into the guide slots (column 7, lines 6-14); and a bevel slit (1122) linked with the rotating knob (1102), where the rotating knob has a pusher rod (1110) that is able to be inserted in the bevel slit, when in rotating the knob, the pusher rod and bevel slit push and guide to press the carrier sets toward the cassette (column 6, line 35 through column 7, line 40, Figures 1-2, 11A, and 11B).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the clamping assembly disclosed by Fox by using the clamping assembly disclosed by Schuette because the clamping assembly of Schuette is designed with a hinge so that the clamps fall away from the platform when not in use, and the clamps may be fastened and unfastened with one hand, so that the user can easily insert or extract the carriers into or out of the cassette (column 3, lines 4-12).

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As to Claim 2, Fox discloses the clamping assembly having a clip (53) on a front and rear side of the cassette (41) (Figure 2).

As to Claim 3, Fox discloses the cassette having a recess opened upwardly both on the front and rear sides, where the recess has a buffering member (71) on the peripheral edge (Figure 3, column 6, lines 30-38).

As to Claim 4, Fox discloses a connecting electrode (49, 50) on each end of the top of the cassette, where the electrodes have conductors (75, 77) (Figures 5 and 8) between them that extend to the bottom of the cassette, the cassette being placed in an electrophoresis bath (39) (column 7, lines 43-45), and the electrodes connected to a power line (29) for electrophoretic separation (Figures 5, 8, 14, and 15, column 9, lines 23-42).

As to Claim 5, Fox discloses the cassette provided with a tortuous passage (120-126), the ends of the path connected with a pipe leading from a water inlet (33) and a water outlet (35), so that cooling water gets in and out of the cassette to cool the working temperature of an electric conducting device in the electrophoresis bath (column 8, lines 29-64).

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fox and Shuette in view of Van Atta.

As to Claim 6, Fox do not disclose the bottom of the cassette having two lateral sides tilted downward to a middle area, creating an action to accelerate raising of bubbles in order to prevent the bubbles from attaching to surfaces of a cassette or carrier sets.

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Van Atta discloses the bottom of the cassette having a U-shaped cassette (14) with two lateral sides tilted downward to a middle area (Figure 2b, column 3, lines 34-37).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the cassette disclosed by Fox by using the shape of the cassette disclosed by Van Atta because it enables easier insertion of a gasket, or buffering member, inside the front face of the cassette for sealing carrier sets (12, 13) inside the cassette (14) (Figures 1 and 2b, column 2, lines 3-8, claim 7).

5. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox and Shuette in view of Hoefer et al. and Sylvester.

As to Claim 7, Fox disclose using a base plate (45) with a plugging medium used to form a plug (80) in order to seal the bottom of the cassette (41) during gel casting (column 7, lines 7-14), but do not disclose the electrophoresis module being provided with a rack with protruding portions extending over the top of the cassette, or a cam unit.

Hoefer et al. disclose the electrophoresis module being provided with a rack (76), the rack having a bottom board (77) for placing the cassette (12 or 13) and upright walls (71) to frame the cassette; the bottom board having protruding portions (33') on the lateral sides of the cassette and extending over a top of the cassette; the protruding portions having holes (74) (Figure 3) for extending of cam axles (72) (Figure 5), where the cam axles have cams (73) that contact the tops of the carrier sets (23a, 23b, 24a, 24b) through contact of tabs (97) (Figures 2, 9, and 10, column 6, lines 25-38); the

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bottom board having elastic pads (36, 36') corresponding with the bottom of the carrier sets, where the bottom edges of the carrier sets are sealed by pushing onto the pads and the top of the carrier sets are flush with the top of the cassette (Figure 7, column 4, line 53 through column 5, line 50).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electrophoresis module as disclosed by Fox by providing a rack as disclosed by Hoefer et al. because it is able to provide pressure to the tops of the carrier sets in a downward direction to better seal the bottoms of the carrier sets (column 4, lines 53-62).

Hoefer et al. do not disclose extending of the cam axles between the holes on opposite protruding portions.

Sylvester disclose an electrophoresis support structure being provided with a rack (10), the rack having a bottom board (16) for placing the cassette (44) and upright walls (12,14) to frame the cassette (44); the bottom board having protruding portions on the lateral sides of the cassette and extending over a top of the cassette (Figure 2); the protruding portions having holes for extending of cam axles (86), where the cam axles have cams (84); and where the cams and cam axles are used in combination to cause a buffer reservoir (22) and sealing gasket (70), which extend across the top of the carrier sets (45) to press in a downward direction in order to seal the tops of the carrier sets (Figures 1, 2, column 3, line 65 through column 4, line 25, column 5, line 41 through column 6, line 13).

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the rack as disclosed by Hoefer et al. by extending a structure across the top of the carrier sets as disclosed by Sylvester because it is able to provide pressure to the tops of the carrier sets in a downward direction in order to seal them (column 6, lines 1-13).

As to Claim 8, Fox do not disclose the bottom of the rack (33) provided with holes for insertion of cam axles.

Hoefer et al. disclose the bottom of the rack (33) provided with holes (74) for insertion of cam axles (72) (Figures 3 and 5, column 4, lines 53-62).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the rack disclosed by Fox by using the rack disclosed by Hoefer et al. because it would allow for additional clamping of the carrier sets onto the cassette (column 4, lines 53-62).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fox, Shuette, Hoefer et al., and Sylvester in view of Jackson et al.

As to Claim 9, Hoefer et al. do not disclose the upright walls of the rack provided with positioning strips on an inner wall for guiding positioning of the cassette.

Jackson et al. disclose the upright walls of the rack (20) provided with positioning strips (115) on an inner wall for guiding positioning of the cassette (Figures 1A and 1B, paragraphs 0069 and 0071-0072).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the rack disclosed by Hoefer et al. by using the

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positioning strips as disclosed by Jackson et al. because they could assist the user in guiding the cassette into the frame (Figure 5B, paragraph 0087).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6193868 B1, US 6110340 A, US 5882495 A, and US 3932265 A.

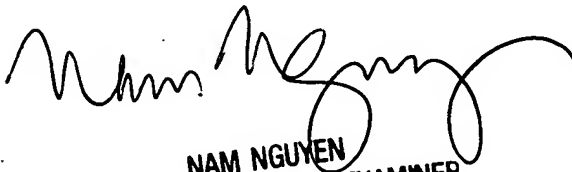
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allison L. Watts whose telephone number is (571) 272-6640. The examiner can normally be reached on Monday through Friday, 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ALW
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